

# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference  L0619.70003	<b>FOR FURTHER ACTION</b> <small>see Form PCT/ISA/220 as well as, where applicable, item 5 below.</small>	
International application No.  PCT/US2004/043950	International filing date (day/month/year)  29/12/2004	(Earliest) Priority Date (day/month/year)  30/12/2003
Applicant  THE BRIGHAM AND WOMEN'S HOSPITAL, INC.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 6 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the report**

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (See Box II).

3. ☐ **Unity of invention is lacking** (see Box III).

**4. With regard to the title,**

☐ the text is approved as submitted by the applicant.

☒ the text has been established by this Authority to read as follows:

THIOPHENE DERIVATIVES FOR UP-REGULATING HLA-DM ACTIVITY

**5. With regard to the abstract,**

☐ the text is approved as submitted by the applicant.

☒ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

**6. With regard to the drawings,**

a. the figure of the **drawings** to be published with the abstract is Figure No. \_\_\_\_\_

☐ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☒ none of the figures is to be published with the abstract.

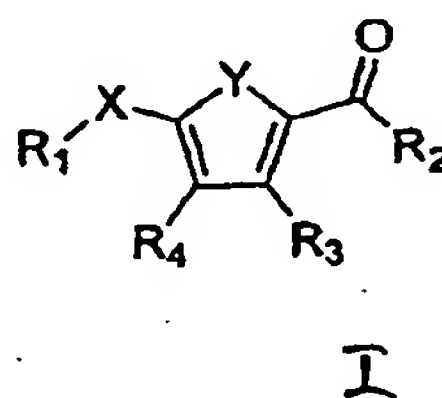
# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2004/043950

Box No. IV Text of the abstract (Continuation of item 5 of the first sheet)

Compounds of formula I, compositions, methods and kits are provided. The compounds and compositions may be particularly useful for modulating immunological responses.



wherein,

$R_1$  is alkyl, aryl, or heterocyclyl;

$R_2$  is H, alkyl, aryl, heterocyclyl,  $OR_3$ , or  $N(R_3)_2$ ;

$R_3$  is H, alkyl, aryl, or heterocyclyl;

$R_4$  is H, CN, halogen,  $CF_3$ ,  $CO_2R_3$ , or  $C(O)N(R_3)_2$ ;

X is S,  $SO_2$ , O, or  $NR_3$ ; and

Y is S, O, or  $NR_3$ .

# INTERNATIONAL SEARCH REPORT

International Application No

PCT/US2004/043950

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C07D333/40 A61K31/381 A61P35/00 G01N33/68

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C07D G01N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, BEILSTEIN Data, CHEM ABS Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 234 622 A (DUPHAR INTERNATIONAL RESEARCH B.V) 2 September 1987 (1987-09-02) claim 3; example VII -----	1,2
X	EP 1 176 139 A (SHIONOGI & CO., LTD) 30 January 2002 (2002-01-30) claim 1; compounds I36,I61 -----	1,2
X	US 2003/187002 A1 (MORTLOCK ANDREW ET AL) 2 October 2003 (2003-10-02) claims 1,3; table 23; compound 212 -----	1,2
X	US 2002/042428 A1 (MYERS JASON K ET AL) 11 April 2002 (2002-04-11) claim 1; examples 33,40 -----	1,2
	-/--	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

\* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

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"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

4 May 2005

Date of mailing of the international search report

12/05/2005

Name and mailing address of the ISA

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Seelmann, I

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 99/55682 A (GEORGETOWN UNIVERSITY) 4 November 1999 (1999-11-04) page 1, line 5 - line 12; claim 1 -----	1-113
A	WO 03/006047 A (MERCK PATENT GMBH; CARR, FRANCIS, J; CARTER, GRAHAM; HELLENDORRN, KOEN) 23 January 2003 (2003-01-23) page 6, line 13 - page 8, line 9 -----	1-113

# INTERNATIONAL SEARCH REPORT

Information on patent family members

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